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[54] **PROCESS FOR UV-PHOTOPATTERNING OF THIOLATE MONOLAYERS SELF-ASSEMBLED ON GOLD, SILVER AND OTHER SUBSTRATES**

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[57] **ABSTRACT**

A process for creating a two dimensional spacial distribution pattern of different thiolate molecules on a substrate by illuminating a surface of a self-assembled monolayer of a first thiolate compound in the presence of oxygen with high frequency electromagnetic radiation distributed according to a desired pattern, and subsequently immersing the illuminated substrate in a solution of a second thiolate compound so that molecules of the first thiolate compound in illuminated areas of the monolayer are exchanged for molecules of said second thiolate compound; and a patterned biomolecular composite formed of a substrate which forms a self-assembled thiolate monolayer when immersed in a solution of a thiolate forming compound, a thiolate monolayer deposited on the substrate and composed of patterned areas of first and second thiolate compounds, respectively, the first thiolate compound having an affinity for specifically or non-specifically adsorbing a biological molecule, and the second thiolate compound having essentially no affinity for the biological molecule, and at least one biological material adsorbed in a corresponding pattern on the patterned areas of the first thiolate compound in the thiolate monolayer.

[21] Appl. No.: **255,961**

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[51] Int. Cl.⁶ **G03F 7/00; G03C 5/16**

[52] U.S. Cl. **430/5; 430/311; 430/315; 430/322; 430/324; 430/396; 427/377; 427/387; 427/539**

[58] Field of Search **430/5, 311, 315, 430/322, 324, 396; 427/377, 387, 539**

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15 Claims, 6 Drawing Sheets

